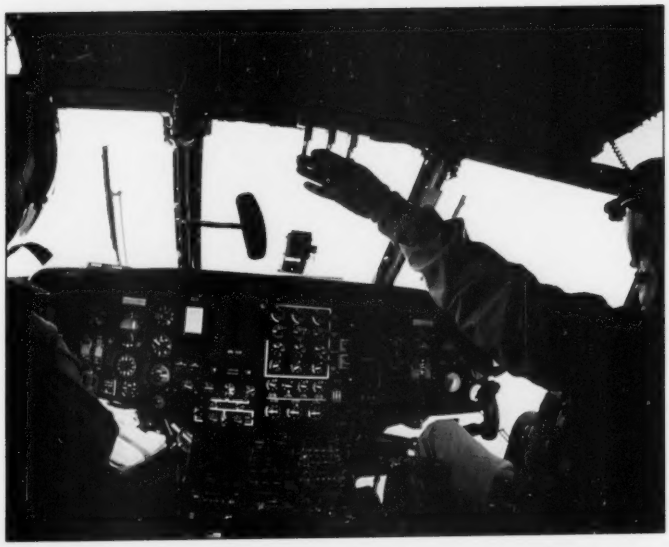
February 1993

approach

The Naval Aviation Safety Review



Special Helo Issue

Helo HACs in HOGE Heaven

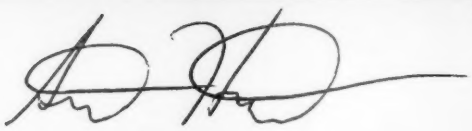
Welcome to our sort-of-annual helo issue. A collection of shake, rattle and roll stories from the guys who shuttle VIPs, find submarines, carry spare parts, deliver SEALS, kill tanks, and rescue cold, wet jet-jocks even though they always tell unflattering stories about helo drivers.

The first time I rode in a helo I was fresh out of AOCS as a stash ensign on board *Lexington*. Every aircraft was exciting, and I bummed rides in anything that flew. The H-3 squadron was kind enough to let me ride along on a plane guard. Two hours of flying in circles with some air-sickness-inducing auto-rotation practice thrown in. That flight made me happy I was an NFO -- no chance of getting helos for me.

At the time I thought helo drivers had the most boring job in the world. I've since learned they do an amazing collection of missions. Some missions would give even the bravest go-faster the willies. They spend a lot of time down low. They land on tiny, pitching decks, at night, in the goo. They have to remember a lot of funny letters and names like HOGE, HIFR, HAC, NG and collective. (If you read this issue, you will understand basic helo-speak.)

Helos may fly slower than P-3s and lower than migrating geese, but these stories can teach all of us lessons about crew coordination, headwork or how to handle an emergency that apply to any community.

Ltjg. Jeff Hilton



Lt. Steve Halsted

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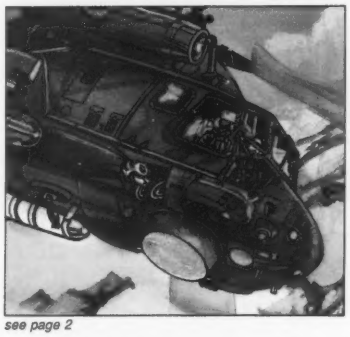

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1992 *Approach* Contributor Awards IBC

On the cover: Helo Montage
left to right: CH-53 (Joe Doyle)
AH-1T (Rick Mullen)
Stallion cockpit (Rick Mullen)
Snowy deck (Joe Doyle)

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RAdm. A.A. Granuzzo, Commander, Naval Safety Center
William J. Mooberry, Executive Director
Col. W.W. Scheffler, USMC, Director, Aviation Safety Programs
Cdr. John H. Christman, Head, Media and Education Support
Lt. Steve Halsted, Editor
Peter Mersky, Assistant Editor

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375 A Street, Norfolk, VA 23511-4399
Attention *Approach* – Code 71
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A months after qualifying as a helicopter aircraft commander, I thought it would be nice to go on a cross-country flight. I begged, pleaded, and badgered the ops officer and finally got the green light. My copilot was a brand-new H2P, a recent grad of the fleet replacement squadron. An AE2 and an AW3 rounded out my crew. The outbound trip was uneventful; the trip home was unbelievable.

A little more than halfway back to San Diego, we stopped for fuel at Edwards AFB in the high desert of California. To get to San Diego, we had to file from the desert over the mountains toward Los Angeles because of our short legs. Our weather briefer warned of strong gusty winds over the mountains. He also told us we could expect some moderate to severe turbulence at times. To get over the mountains and home (via the shortest route) we had to file for 10,000 feet as our initial cruising altitude.

On takeoff, we climbed to clear the mountains to the west. I think I had been to 10,000 feet maybe five times since primary fixed-wing flight training, and even though we would clear the mountains by 2,000 feet, my anxiety level was high. I concentrated on the maximum-maneuvering airspeed vs. density-altitude chart in the aircraft, but I didn't express my concern to the other crew members. The combination of our altitude, high gross weight, and the forecast turbulence made us excellent candidates for retreating blade stall. I cross-checked the max-maneuvering airspeed chart and deduced that we could safely fly at 100 knots, give or take a few knots.

We hit the goo at about 6,000 feet, and the turbulence immediately started pushing us around. Once we were level at 10,000 feet, the turbulence picked up, but it was only moderately scary. Our route had us heading southwest over the mountains toward San Diego and skirting

THE PAPER AND INK USED IN THE ORIGINAL PUBLICATION MAY AFFECT THE QUALITY OF THE MICROFORM EDITION.

Mind Readers Requested

By LCdr. John G. Gallagher

Los Angeles well to the east. I don't know about you, but I've never been able to file through LAX airspace without having my route changed several times after I got there. True to form, Approach started giving us vectors. Instead of heading southwest toward San Diego as planned, we were vectored west toward the coast with a later turn south passing directly over LAX. My copilot was having a hard time telling where we were actually supposed to go, so we switched controls and I told him to stay below 100 knots. However, I failed to tell him why.

The aircraft pitched up and over, and we fell out of the sky toward the jagged mountains below.

At this point I buried my head in the charts to navigate our new route. After several minutes and numerous modifications to our flight plan, the aircraft started to vibrate so violently that the IFR supplement and approach plates were bouncing off the glareshield. Just as suddenly, the aircraft pitched up and over, and we fell out of the sky toward the jagged mountains below. I threw the chart on the glare shield, hollered, "I got it!", and took the controls. By that time, we had fallen about 1,200 feet.

I expected to see the ground very briefly and for the last time in my life, but I tried to concentrate on getting the nose on the horizon and building back my airspeed. For some reason that is hard to explain, I felt it necessary to tell Approach that we were falling and hadn't suddenly developed a lemming's suicidal desire. I said we were unable to maintain 10,000 feet. Approach rogered and approved 8,000 feet. That meant we had cleared the mountains. We mushed into 8,000 feet at somewhere around 60 knots airspeed. I did not recognize this evidence of blade stall, but thought instead that the automatic stabilization equipment (ASE) had simply gone berserk and tried to kill us. I had turned it off sometime during our fluttering descent.

We flew with the ASE off for a while, and then I gingerly turned it back on. I hoped for the best, but decided I would turn it back off if the vibration returned (a little in-flight troubleshooting for the maintenance crew back home).

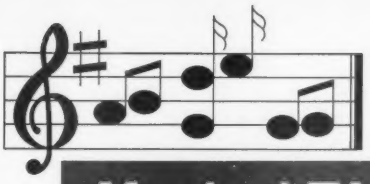
Nothing happened when I re-engaged ASE; the helo flew perfectly. I was confused. We flew a little while longer and finally decided that the earlier problem was a fluke. I gave the aircraft back to my copilot with a strong warning to stay below 100 knots. I was back in the charts with more vectors from Approach when the aircraft started to vibrate again. This time my copilot yelled, "You got it!" I pickled the ASE and we only lost 500 feet before regaining control. We begged approach for a lower altitude and they gave us 5,000 feet and a turn south toward Los Angeles.

When we finally broke out of the goo, we were staring straight at what appeared to be more mountains, but which were actually some very ominous clouds that looked liked mountains. Another frantic call to Approach requesting the minimum safe sector altitude convinced us that 5,000 feet in fact was fine.

We confidently flew through the clouds and broke out over Los Angeles. I went through another period of troubleshooting and got nothing. Once again, the aircraft flew perfectly. If I thought I had been confused before, this time I was stumped. I was convinced we had a diabolical ASE, and we flew the rest of the way home with the system off.

This flight was a textbook example of poor communication and crew coordination. Luckily, it turned out OK. While we were filling out the yellow sheets and discussing what had happened, I told the crew I thought we had experienced retreating blade stall. However, even considering the other turbulence, my calculations indicated that 100 knots should have been safe enough. At this point, my copilot told me he had been flying in excess of 110 knots both times when the aircraft went wild. Since I hadn't explained my concerns about blade stall at any time during the flight, he never understood my sudden desire to fly below 100 knots after we had been flying above that speed on all the previous legs.

I keep re-learning a basic axiom: just because I am thinking of something doesn't automatically telegraph it to my crew, no matter how logical and clear-cut it seems. Mind reading is not a prerequisite for flying; aircrew coordination is. If cockpit communication breaks down, if someone doesn't understand why someone else is doing something, or if someone assumes something based on false data or no data at all, the situation can become critical. ◄

LCdr. Gallagher flies H-2s with HSL-34.

Musical TACANs

By Ltjg. Brian W. Frazier

Our det had just stood up and reported on board our equally new Aegis-class cruiser. I was new, and our first night on our new ship was the first night I had spent on board a Navy ship. Things were going pretty well and the new guys were getting used to working around the carrier, in bad weather and rough seas.

We had just completed an SSC mission and were inbound to mother. We checked in with Marshal and the Boss, and we told the ATACO we were coming in. Everyone rogered our calls and we headed toward the ship.

Our ship was shotgun for the CV so we knew they would be close together and our tactical screen confirmed it. The two ships were right next to each other while the carrier was maneuvering to recover a COD.

"Great," we thought, "mother will be on a recovery course when we get there."

We got the numbers from the LSO and began our TACAN approach because the weather was closing in and it was almost dark. We were in the goo for the entire approach, but the instruments said we were right on course. The needle was lined up perfectly, which was good since the COD was inbound to the carrier and mother was alongside. We didn't want to cross the CV final with traffic inbound, right?

We broke out at about three-quarters of a mile but the lights didn't look like we thought they should. When we got closer we could see why: we were on a perfect final for the *carrier*.

We quickly put in a healthy left bank and started to climb. Once level, we asked each other about our dilemma. No one in the helo had an answer. A quick downscale of the tactical picture showed homeplate to the left. A quick interrogation of the ATACO confirmed that the CV was on the starboard side. We used the tactical screen to find our ship while confirming her and the carrier's TACAN channels with our brief sheets and the ATACO. The briefed channel was the one set, but the ATACO had a little bit of news that we had not received: our cruiser and the carrier had switched channels because the channel assigned to the carrier was drawing interference and was unusable. We landed on our ship using a self-vectored tactical-screen-semi-visual approach.

Never assume anything, not even the most obvious information—such as, in IMC, the ship won't swap TACAN channels with a nearby carrier without telling you.

PH3 James M. Lamont

Communication can save a lot of trouble. Ask about everything, no matter how unimportant it may seem. If something isn't right, ask why. Earlier in the flight, while outbound, we noticed that the carrier's TACAN wasn't working right and we couldn't get a lock-on. A question to the ATACO might have prompted him to tell us about the problem and the proposed solution. There is no reason to minimize communications on a Hawk-link channel that is secure and devoted to one LAMPS Mk-III aircraft.

Use all available navigation aids all the time. Although our tactical screen isn't rated for shooting approaches, and once committed to a TACAN approach both pilots have their duties defined, a quick glance at the screen would have prompted a question from us and (I hope) an amplifying response from the ATACO as to why our TACAN and tactical pictures were telling us different things. You should trust your instruments, but you have to use all of them. ◀

Ltjg. Frazier flies with HSL-42's Det 5.

Get-Home-Itis - At Home!

By Maj. J.P. Dehart, USMCR

How can get-home-itis affect you when you are already where you want to be? I found out the answer on a FAM hop.

At the end of an uneventful flight, I joined the Camp Pendleton bounce pattern for a few practice autorotations. Since my AH-1J was low on fuel, the airfield is at sea level, and the morning was cool, the Cobra had all the excess power in the world to accomplish the normal power recovery maneuver. After a number of these recoveries, I stopped to get fuel and change copilots.

Since I was an instructor at the training squadron, I was proficient at nailing practice autos to a spot. I usually did one or two per FAM hop to impress upon the student that it could be done. With a new copilot, I took the controls and told the tower that we would make one auto to a spot before departing the airspace. In my mind I had to hit the spot precisely, thus preserving the honor of my helicopter community and looking good in the process.

My entry into the autorotation was normal enough, but we were a little fast when we rolled out on final. No problem. I just started the flare a little early and that slowed us down. Flaring early meant flaring higher, which, combined with a stiff breeze, stopped our descent. Still intent on making the spot, I pulled back on the stick to increase the flare as airspeed approached zero. Airspeed parameters were absolutely normal; altitude was not. I ended up at 100 feet AGL with no airspeed. However, I was directly over the spot. So all I needed to do was go straight down and I would still be "looking good."

I pushed the nose over and descended vertically, intending to hold off the power recovery until I got closer to the ground. That intention evaporated in one second as I felt the rate of descent go from zero to horrendous. Though I had been doing the same maneuver a half-hour before, there was the little matter of 1,800 pounds of fuel (a full tank) that had been added since then.

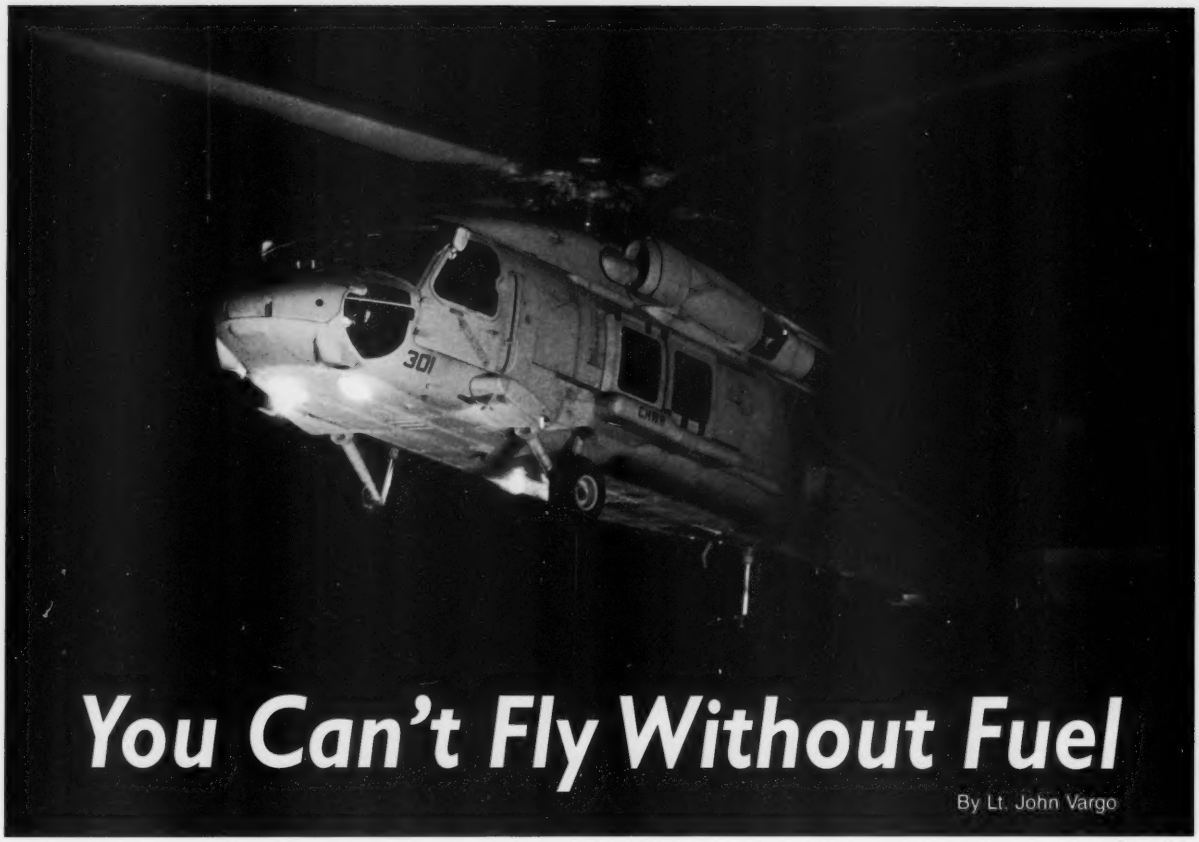
I realized the precariousness of the situation and instantly rolled up the throttles. The engines began their less-than-instantaneous spool-up. Terra firma rushed up and, power or no, I had to pull collective. Pulling pitch before the engines were producing full power caused the main rotor rpm to decay but did stop the descent – six inches above the ground.

Unfortunately, I was still in a "power required exceeds power available" situation and the main rotor rpm decay led to a loss of tail-rotor thrust. The aircraft began a series of out-of-control spins to the right before the engines finally caught up with the demand and stabilized main rotor rpm at 100 percent (restoring tail-rotor authority).

Despite the wild ride, I was still over the spot, but I sure hadn't looked good doing it.

Why did I have get-home-itis? Because I had fixed in my mind that I had to land on one particular spot, on that particular approach. I was committed; and I was committing one of the biggest mistakes of my flying career. *Every* landing in a clear bounce pattern can be waved off, even at the expense of not looking good. I had get-home-(to the spot)-itis, and I was already at home! ◀

Maj. Dehart flies with HMA-775. He has been selected as *Approach's* Contributor of the Year for 1992. (See IBC.)



You Can't Fly Without Fuel

By Lt. John Vargo

George Hall

It was a naval aviator's dream for a night hop: full moon peaked on the azimuth and CAVU. The mission was localizing and prosecuting an orange submarine during a LANTFLT exercise. The aircrew was in the final localization phase preparing for an attack, when the aircraft commander decided to depart station and return to the ship for a hot pump. The aircraft was 60 miles from homeplate with 90 minutes of fuel.

The tactical action officer and embarked ASW commander asked the HAC to remain on station and conduct the attack before returning, but the HAC continued toward the ship. At an indicated airspeed of 120 knots, the time of flight should have been approximately 30 minutes. However, 59 minutes later, and low on fuel (below squadron SOP mins), the aircraft rolled final for landing. What happened?

Post-flight analysis revealed two things. First, when the aircraft commander called RTB, the ship turned away from the aircraft and made a high-speed 32-knot run toward the next rendezvous point. Second, the aircraft encountered a 25-30 knot headwind making a ground speed of approximately 90 knots. Had it not been for the HAC's situational awareness, two pilots and an aircrewman might have been lost.

It is easy to lock into the simple calculation of time-to-destination using airspeed versus distance remaining. But without all the information, the situation can degrade rapidly. All pilots must continually be aware of conditions and plan the flight accordingly. It is easy to push the extra five minutes on station and be a hero, but in most cases, it is not worth the heartache of fuel crunching and wondering if there is enough fuel to make it back.

I remember when I checked into my squadron fresh out of the FRS, a senior pilot told me, "No matter how good a pilot you are, you cannot fly without fuel." Good pilots always know the situation and adapt their plans accordingly. ◄

Lt. Vargo flies SH-60s with HSL-48

Honey, Did You Bring My NATOPS?

By Lt. William Gross

In three weeks, I got married, bought a new home, discovered that one of my parents had cancer, and went to sea with my LAMPS detachment. These stress factors, coupled with my relative inexperience, laid the foundation for a mishap.

I had logged more than 500 hours and 100 small-deck landings, and I was starting to feel comfortable around the ship. Because of my marriage and honeymoon, I was out of the cockpit for two weeks. Realizing that I needed to prepare for the upcoming at-sea period, I decided to do a little extra NATOPS studying (somehow, I forgot to take my NATOPS manual on my honeymoon). Time was short, so I focused on emergency procedures, limitations, and memory items, besides taking care of flight-hour requirements before deployment.

While in flight school and the FRS, I had spent a lot of time looking through my NATOPS pocket checklist to practice locating emergency procedures (EPs). Recently, however, I had neglected this practice. I figured that there were only a couple of things that could kill you fast, and really, how hard could it be to find something in that little blue book?

We launched for a night ASW hop in our SH-2F. During the flight the dew-point spread began to drop, but the ceiling remained 1,000 feet with VFR on top. Eager to get as much good training with our ship as we could, we pushed on into the night.

The flight was going great. We had received our tasking, tested all the equipment, and headed straight out to datum. I started to notice rain on the windscreen; we were in and out of clouds. I did not pay much attention, since I was more interested in the tactical problem and our buoy lineup.

Just as we started to get into the problem, the green glow of the TACNAV computer was replaced by the very bright red glow of an engine-compartment fire light. These lights are designed to catch your eye. Boy, they succeeded! I have had fire lights during the day, but I was unprepared for how a fire light would look at night in the goo.

The engine-fire memory items came easily. The HAC turned toward mother as we did the immediate-action steps. I reached for the pocket checklist while the aircrewman tried to confirm the fire. I fumbled through the pocket checklist while looking for the EP. After several wrong pages, I eventually found the EP and challenged all the steps, starting with the title, as we had briefed.

We were now fairly confident that there was no fire, so our next task was getting back safely on deck. I needed to do something about the fire light that was now blinding the HAC. As hard as I tried, I couldn't find the circuit breaker-panel listing in my pocket checklist, which quickly frustrated me. I next grabbed my flashlight and started searching the panel. I forced myself to calm down and look at all the breakers. I could not find the correct breaker on the main panel, so I went to the auxiliary circuit breaker panel. I found the circuit breakers for the fire-extinguisher system, but not the fire light. After looking a third time, I gave up and told the HAC I couldn't find the breaker we needed. I decided to just use my hands to cover the lights.

One mile astern, the boat was just a radar return; the weather had closed in. We routinely do self-contained approaches (SCAs) and had practiced several the night before. But somehow, sitting there with my hands covering the lights and in the goo, I did not feel very comfortable. I was starting to stress out.

As we marked on top of the ship to start our SCA, I tried to help. I did the landing checklist seven times. I was bugging the HAC, so I looked for another way to contribute. I started calling altitudes and airspeeds and tried to be as encouraging as I could. Coming in on the SCA, we got a visual on the ship at about one-half mile, and flew to the deck without incident.

I talked with the crew chief and the other pilots, and they asked why we had not pulled the circuit breaker. I told them I could not find one. Of course, it was easy to find on deck. Should I have asked over the radio for some helpful suggestions? Probably. I thought about it, but I was consumed with blocking the light with my hand and getting back to the deck.

I learned a very good lesson that night. Instead of just studying "the big stuff" when getting back into flight operations, I should have prepared more thoroughly for my upcoming deployment. When I considered the extra stress and its ability to affect job performance, I should have known to make a special effort to bone up on NATOPS. This event wasn't life threatening, but it really showed me that not keeping up can certainly reach up and bite you at any time. ◄

Lt. Gross flies with HSL-34.

A Dipper Takes a Dip

By Ltjg. Robert A. Strange

Another warm, sunny day in the Caribbean—a beautiful day for flying during REFTRA even though we were at maximum gross weight with a full load of fuel, sonobuoys, and two torpedoes. Not to miss a training opportunity, we planned to practice HIFRs (helicopter in-flight refueling) on the ship while they were at flight quarters for hover transfers from our playmate, Jaguar 612.

While waiting for the second helo to lower the last passenger to the deck, we flew a low approach to the water to check our out-of-ground-effect (HOGE) power requirement. Everything was fine as the HAC in the left seat departed the hover and proceeded downwind at 130 feet.

Bang!

I yelled for full power as I pushed both speed selectors to full forward. The HAC was busy trying to maintain Nr, attitude, and airspeed as I started to analyze the situation. Torque on the No.2 engine was low and T5 was rapidly rising to overtemp—classic signs of a compressor stall.

I immediately made the radio call. "Tower, Jaguar 616 is declaring an emergency, and requesting a green deck. We have lost an engine."

The Air Boss cleared us to spot three-and-a-half, and we began a shallow turn toward USS *Saratoga* (CV 60), a little more than three miles away, as I completed the landing checklist.

Our playmate joined in a loose trail position and called, "Jettison your torps," which I did. The HAC said, "Don't be selective," so I pressed the jettison button and rotated the dial through all eight positions. I was rewarded by the acrid smell of the CADS firing.

Even with the reduction in weight, we were approaching the fantail below the deck edge with the helicopter beginning to shuffle from the low rotor rpm. The HAC called, "We may be ditching!" I started the checklist and began to dump fuel.

At 45 feet, with fire lights beginning to illuminate in both engines and Nr decreasing to 84 percent, we realized we weren't going to make it to the ship. The HAC made a flawless water landing abeam the CV in six-foot swells. I inflated the emergency flotation bags and called for a security check. The crewmen wisely reported that it was too rough to unstrap from their seats in the after-station, but it appeared there was no damage and they were able to throw out the loose items in the cabin through the open cargo door.

Bang!

I yelled for full power as I pushed both speed selectors to full forward.

Riding the swell and continuing to dump fuel, we were able to regain 100 percent rotor rpm. We were afraid that the ship's wake would tip over the aircraft, so we decided to make a jump takeoff from the water. As we broke free of the water and climbed above the flight deck, I secured the dumps. The HAC then made a no-hover landing on the angle deck and we made an emergency shut-down.

The whole sequence took place in slightly less than six minutes from the engine failure to wheels on deck—almost as fast as you can read this article! To me, it seemed an eternity. It was like a slow-motion movie, with a great deal happening in a very short time.

I certainly learned about the importance of the boldface emergency procedures, especially the fourth step in the single-engine-failure procedure: Reduce gross weight, if necessary, by dumping fuel and/or jettisoning stores. I also realize the importance of practicing emergencies and the value of the aircrew coordination training now being taught in our squadron. ◄

Ltjg. Strange flies H-3s with HS-9.

The TACAN needle was still tempting us to follow the ship's vector, but the vector didn't make sense; it was just too radical a change from the reciprocal course.

How Did the Old-Timers Do It?

By Lt. David D. Diamond

Many times I've flown around in my tiny SH-2F looking at all my navigation equipment – TACAN, radar, doppler, TACNAV computer and sometimes GPS – and wondered how we were able to win World War II with aircraft equipped with only an ADF, a clock and a magnetic wet compass (that's what we call a standby compass in the SH-2F). One day I found out that even with our SH-2F's modern navigational package, there are times when you have to navigate the same way as the old-timers.

It was a beautiful day in the southeastern Pacific. Our ship had been doing counter-narcotics operations for a couple of weeks, and we would soon be headed back through the Ditch to our normal stomping grounds in the Caribbean. Our job was to fly out to the edges of our box, finding and identifying all surface traffic.

We climbed to altitude and could only find one contact on the radar. Using the common sense most naval aviators possess, we figured it was the supply ship that had refueled our ship earlier that day. We relayed the information to the ship and were immediately tasked to check out this "unknown" contact. I told the other pilot that common sense was not in effect today and we started our mission.

Mother tried to be helpful and pass on a suggested vector, but it was at least 30 degrees out from our solution, so we ignored it.

A couple of more times during the flight to the contact, the ship gave vectors to the contact that were at least 30 degrees off. We figured there was probably a new trainee on the maneuvering board and continued with the headings called by our AW. About an hour later, we were on top of the "unknown" contact. It was the supply ship we thought it would be. We took pleasure in letting the ship know what the contact was and resisted the temptation to say, "We told you so." By this time, we had lost homeplate on our radar, but still had good comms.

We asked for additional tasking and were told to RTB. The ship gave us a vector that was way out to lunch. We asked them to check their solution and proceeded down the reciprocal of our outbound course. Ten minutes later, the ship gave us a similar solution and our TACAN began to lock onto the station. We still had no radar contact on homeplate and the TACAN didn't look quite right. In fact, the TACAN agreed with the ship's solution.

Normally, we would have trusted our TACAN, but the change in heading was too drastic. We immediately compared our BDHI to our standby compass and they agreed. At this point, the ship began to get very pushy asking why we had not turned to their vector. We told them we thought something was wrong with their navigation equipment and requested they check their solution. Then the fun began.

The ship called back with the same solution and told us to check *our* navigation equipment. We told them our BDHI agreed with our standby compass and our equipment was fine. The TACAN needle was still tempting us to follow the ship's vector, but the vector didn't make sense; it was just too radical a change from the reciprocal course. We still did not have homeplate on radar.

At this point, I started thinking, "How would the old timers find their way home?" First, I used the sun to check my compass. The BDHI said we were headed east. It was the afternoon, and the sun was behind us. So, the BDHI was working.

About this time, the det OINC came on the radio and asked what the problem was. We told him we thought the ship had a problem with its navigation equipment; our BDHI and standby compass were in sync, but the TACAN agreed with the ship. He said it sounded like the ship had a problem and to trust our equipment.

Ten minutes later, we still had no radar contact with homeplate. Then the idea hit me. It was so simple, I could have kicked myself for not thinking of it sooner—ADF! I turned the No.1 radio to ADF and asked for a short count. The ADF needle locked up almost exactly on our course. Everyone felt much better. A few minutes later, we found the ship on radar and were set.

By this time, the ship's crew was getting indignant that we would not follow their vector and explained that according to their Mo'Board we needed to turn to their vector. I finally said, "You're wrong. We'll see you in about 30 minutes. Out".

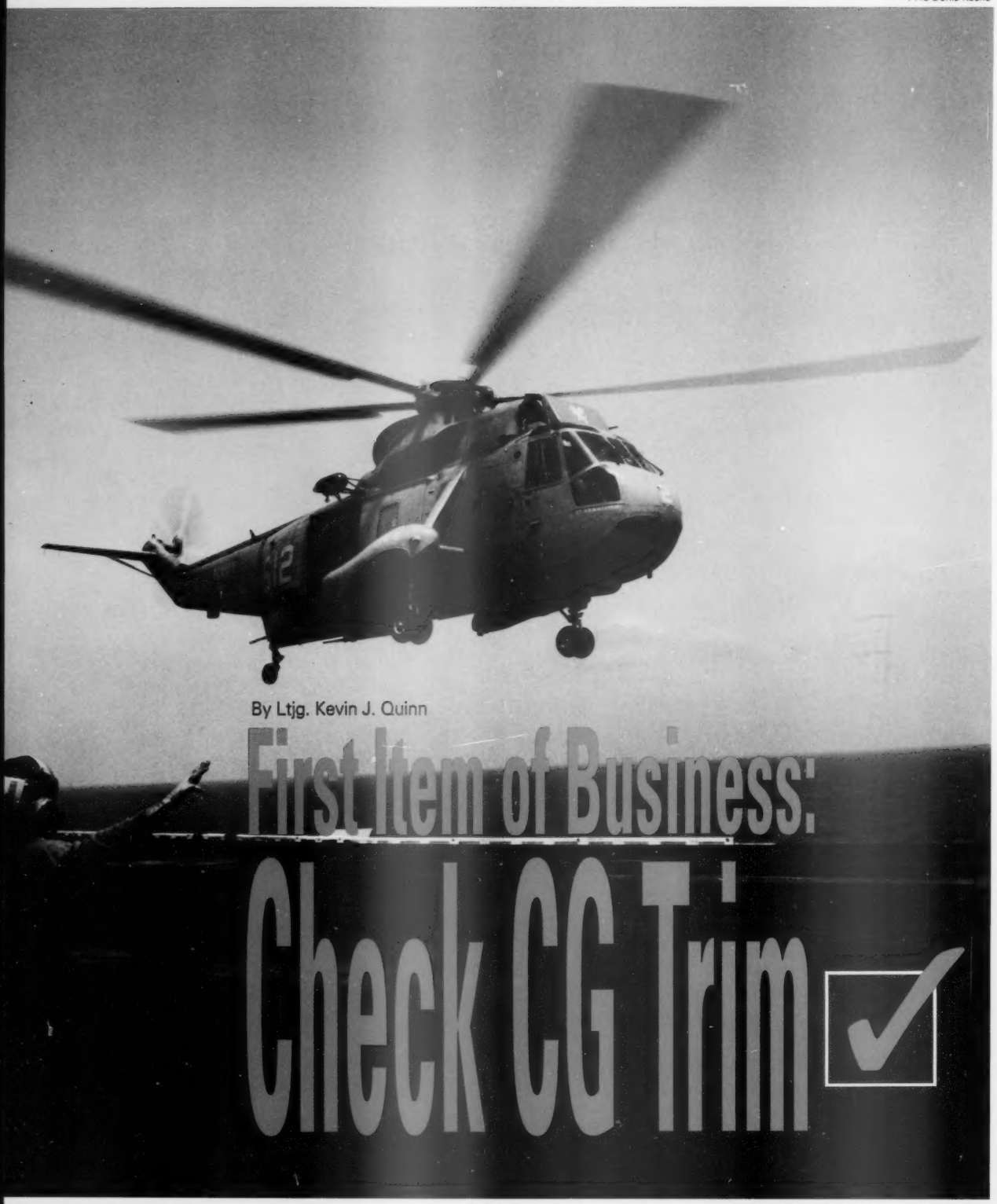
I probably insulted some watchstanders, but they had inadvertently been trying to get me lost.

Thirty minutes later, we marked on top of homeplate. Then the ship called. "We think our directional gyro is bad. Could you please fly over us and tell us our course." They *finally* realized the problem was on their end. If we had followed their directions, we would have flamed out somewhere in the Pacific.

The ship's TACAN gets an input from the directional gyro. If the gyro goes bad, the only thing you can trust is the DME. You must trust your instruments, but you must check them against each other, and use common sense. We should have thought of using the ADF sooner. ◄

Lt. Diamond flies with HSL-34.

PHC Denis Keske



By Ltjg. Kevin J. Quinn

First Item of Business: Check CG Trim

We brief crew coordination on every flight and stress it especially for night operations. Checklist procedures can't cover every aspect of the flight nor every response to indications in the cockpit. Detailed knowledge of systems and trained reactions allow us to control emergencies with good crew coordination and NATOPS procedures. Although these methods were emphasized to me throughout flight training, their importance was never more apparent than during one particular night launch from a CV.

Forrestal had just pulled out from an incredibly fun-filled Mediterranean port call and I was still clearing the fog from my head that had developed over the past week from too many late nights. My HAC and I briefed for a plane-guard hop to cover the night events. We were supposed to hot-seat after sundown and our brief stressed doing every checklist item; the crew switch went smoothly. From the copilot's seat, I read through the checklist, set up the navigation equipment, and checked the gauges to ensure everything was in order, but I missed something.

When we received a green light for launch, my HAC lifted us into a hover over the deck. After checking the engine gauges, I shifted to my own instrument scan. There was no horizon—a true instrument takeoff. As we transitioned to forward flight and started our climb off the angle, I realized we were right wing down, turning toward the bow.

I said, "You're in a right turn, about to cross the bow."

After fighting to maintain a wings-level attitude, the HAC said, "You have the controls; my gyro is precessing."

I took the controls, concentrated on my scan, and climbed straight ahead. I soon began to feel disoriented from pitch oscillations. My first thought was that my air work was unusually poor. As I turned downwind at 300 feet and crossed the stern to take plane-guard station, I still could not maintain constant airspeed or altitude. As I continued to struggle with the erratic pitch attitude, I decided that the trouble was not entirely my air work. I told my HAC that I was having trouble trimming a constant attitude.

Three weeks earlier, we had experienced a pitch-channel failure in the automatic stabilization equipment (ASE) so we began to troubleshoot the ASE without using the emergency procedures checklist. However, just as we were about to secure the ASE pitch channel, my HAC suggested we check the center of gravity (CG) trim. I found the CG trim knob full aft. After a minor adjustment, we regained the pitch authority of the ASE and the rest of the flight went smoothly.

As I turned downwind at 300 feet and crossed the stern to take plane-guard station, I still could not maintain constant airspeed or altitude.

This experience brought out several important points. First, when hot-seating an aircraft, back up the checklist with a scan of all cockpit instruments, switches and control positions. If I had ensured the ASE CG trim was adjusted for the new fuel load, the vertigo-inducing pitch oscillations would not have occurred.

Second, use the checklist after diagnosing an emergency; that's its purpose. The first item in the PCL for ASE failure is "Check CG trim." We wasted five minutes troubleshooting when, if we had followed NATOPS, we would have found the solution immediately.

Finally, communication in the cockpit is essential. It allows each pilot to understand what the other pilot sees in and out of the aircraft. In our case, this alone could have spared us a little scare and another lesson learned. ◄

Ltjg. Quinn flies with HS-15.

The Home Stretch

By Lt. David Renberg

We could see *Wisconsin's* 16-inch guns firing toward Iraqi positions on the shoreline. Our Senso passed us the latest set of radar cuts onto the TACNAV screen: the tip of Kuwait City, the southern corner of Faylaka Island, the battleship, and several of the coalition ships in the battleship's fire-support area. The TACAN showed homeplate 55 miles to the southeast. We had 1,800 pounds of fuel on board, enough for another 30 minutes on station and a safe cushion for the flight home.

The smoke from hundreds of burning oil wells hid the coastline and darkened the skies over most of the North Arabian Gulf. The visibility had dropped to five or six miles. The soot and particles of oil suspended in the air spotted the windshield of our SH-2F Seasprite as we hummed through the smoke layer at 150 feet. Anything higher was IMC, but the ducting gave us good radar ranges and allowed us to carry out our SSC mission at lower altitudes.

The Iraqi small-boat threat still existed, and the previous night's message traffic indicated that several contacts had been spotted fleeing Bubiyan Island for the Iraqi coastline. The only bridge leading off the island had been destroyed, forcing the Iraqis to leave by boat or face a possible amphibious assault.

Our Senso picked up what appeared to be two small boats about 35 miles to the northeast. I turned to put the contacts on the nose and made a report to ASUW Control. They directed us to close the small boats and identify them. The next set of radar cuts showed the contacts several miles off the southern coast of Bubiyan Island, tracking northeast toward the Shatt-Al-Arab Waterway. The HAC asked for a fuel check; we had 1,600 pounds. I looked down at my BDHI and saw a spinning TACAN needle and an "off" flag in the DME window. We had repeatedly experienced inaccurate bearings from our ship's TACAN. The DME, however, had always been reliable. I dialed in the channel of a closer ship and got a strong lock. Our aircraft equipment seemed to be working, but we were just too low and far away to pick up homeplate.

About this time, our fuel got a little tight. Our TACNAV computer showed our ship 61 miles away. I calculated it would take about 700 pounds to reach homeplate, so we had 400 pounds before bingo with a 500-pound reserve. The entire crew was eager to contribute to the war effort by getting the VID and possibly cutting off the fleeing Iraqi forces. Our Senso called the contacts bearing 030 at 20 miles, but instead of continuing inbound, the HAC turned away to the south. He was heading home.

I thought we had enough fuel to play with, but we notified ASUW Control that we were bingo. Control advised that there were no other assets available to continue the VID mission and asked how quickly we could hotpit and return on-station. With homeplate more than 60 miles away and no decks in between, it would be too long. We would lose them for sure.

We continued southward toward homeplate. A few fuel checks later, our Senso picked up a group of ships on the nose. The radar cuts correlated with the position of homeplate on the TACNAV screen and our TACAN was intermittently locking onto homeplate. Mother indicated that she held us in radar contact and advised us that there were several H-53s in the area. Thirty miles to go, 800 pounds, sweet comms, no sweat.

The sky was darker than it had been near shore and visibility was about three miles. We pushed through the haze toward the ship we held on our radar scope. A few minutes passed, then a gray hull appeared through the smoke. No one spoke for several seconds—it was not our ship! We had flown to one of the British minesweepers that had been operating in our area. My eyes shot to the TACAN needle. It was still spinning. We were down to 500 pounds of fuel.

We asked Control for a steer, but what they gave us would have pointed us away from the other contacts we held on our radar scope. Control had confused us with one of the H-53s. We pressed the IFF ident and switched the No.1 radio to ADF mode. Several minutes later, the aircrewman called a contact 40 degrees to the right at two miles, but we had no visual. We pushed through the smoke and happily saw homeplate. We had a green deck on arrival and landed with 350 pounds. Just minutes before I had been willing to burn another 400 pounds chasing Iraqi patrol boats. I was caught in the heat of the moment and wanted to stretch my fuel. If it had not been for the seasoned HAC sitting next to me, I might have placed the aircraft and crew in the water just miles short of homeplate. I had not counted on the low visibility, TACAN inaccuracies, and the confusion with the other helos. A 20-minute cushion may be enough if your planning is good and your equipment works as advertised. We were fortunate. Next time, I won't put myself in a situation that requires that much luck. ◄

Lt. Renberg flies with HSL-34.

The Negative Learning Curve

By LCdr. Phil Logan

First cruises are filled with new experiences, opportunities and lessons, which we carry with us throughout our aviation careers. These periods allow aircraft commanders to draw upon their knowledge to educate their copilots. First cruises also give senior pilots a chance to scare the daylights out of new copilots.

I recall my first LAMPS detachment flying the SH-2F Seasprite. The officer-in-charge, a very senior 0-4, and I were scheduled for a late night SSC mission in the North Atlantic. The night was a black hole, with a 1,000-foot overcast and no horizon. We investigated all of the surface contacts in the first hour of the flight, and boredom began to set in. My HAC saw an opportunity to instruct his fledgling copilot, and he decided that we would do some unbriefed night doppler approaches. I had never done any dopplers in the open ocean, so I was up for the challenge. We completed the pre-doppler checklist and dropped a single Mk-25 marine location marker.

Because of the difficulty of judging the distance to a single smokelight on a very dark night, our setup on the approach was marginal at best. The aircrewman in the door was doing his best to call ranges to the simulated survivor. He was an experienced crewman, so I believed all of his calls.

Within approximately 500 yards of the smoke, the HAC said, "I wonder what it would look like with the landing and floodlights on." Suddenly, the inky blackness became a milky white blur as the lights illuminated the low haze layer.

It took a few moments for me to regain my orientation, but I reacquired the smoke and requested that we set the limit pointers on our radar altimeter to 40 feet. I pulled back on the nose to slow our closure rate and somehow avoided tripping the doppler off-line. We overshot the smoke and the radalt indicated 40 feet. My attention was fixed on the directional velocity indicator (DVI) as I responded to the crewman's correction calls.

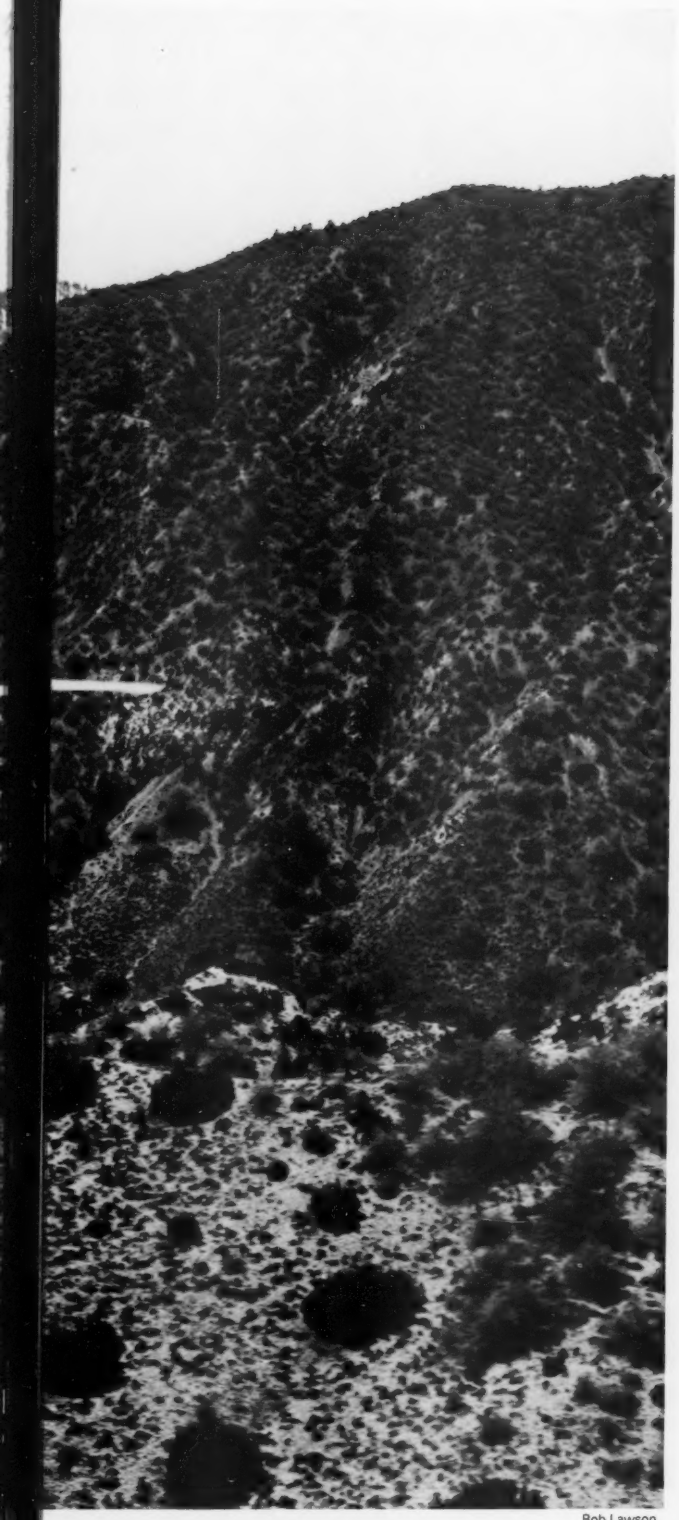
Suddenly, the HAC became very agitated and started yelling that we were backing down. The DVI crosshairs were centered and I held a steady smoke in my peripheral vision. I could not understand why he was so upset. The HAC abruptly took the controls, disengaged the radalt-hold function, and ripped in an armpit-full of collective.

I was witnessing my first case of full-blown vertigo...

Within an instant, we were passing 250 feet with zero airspeed. I strongly suggested that he put the nose down to regain airspeed, but all he could say was, "Overtorque!" He bottomed the collective and pushed the stick forward to 20 degrees nose down. I then suggested that we quickly gain altitude. He once again pulled the collective to his armpit, and we were then flying sideways at something near 100 knots. I was witnessing my first case of full-blown vertigo, and I began the litany of, "Altitude. Airspeed. Ball." We were soon flying safely again. I turned off the lights as the HAC climbed to 2,000 feet and engaged the barometric altimeter hold. Only then did I remember the aircrewman—in the gunner's belt, at the door. A very hushed reply came over ICS that he was, in fact, still aboard, and that he was strapped very securely in his seat.

Many years and more than 2,600 hours later, I still cringe at the thought of night dopplers, and I will never even dream of doing them with a single smoke again. ◄

LCdr. Logan flies with HSL-34.



Bob Lawson

One-Time Flight

By Lt. James F. Churbuck

"We landed in a farmer's field a couple of miles from the road. We got a transmission hot light, gauges above red line, some grinding sounds too, but not real bad." The pilot's voice crackled over the radio, his voice cutting in and out as the radio waves skipped down the side of the mountain ridge.

"The mech pulled a couple of pieces of fuzz off the gearbox chip detector," the copilot reported, "but we never got a light. The transmission oil pressure fluxed plus-or-minus three, and we got a utility hydraulic hot light after we shut down to accessory drive."

The chief in Maintenance Control, an assertive and astute decision-maker, called for quiet in office. He was an experienced aircrewman. He had made chief just the year before, but had clearly grown into the role. He was obviously in deep thought, his mind racing through both the ongoing malfunctions and the ramifications of changing a transmission in such a remote location. He wondered if he'd have to rob a transmission to get the bird back to the base; there hadn't been any transmissions in the supply system for several months. It could take more than a week to swap things around—if they were lucky. The chief had just turned to the maintenance officer when they heard the next broadcast.

"We turned it on deck for 15 minutes, shut down to check for chips, and everything seems OK now. There's a QAR on board, and he thinks it's OK for a

one-time flight back home. We want to bring it back to base, minimum crew. You'll have to get another bird to get the rest of the guys."

The pilot's voice sounded even more garbled, and there was enough static and whine in the broadcast to suggest the pilot had made up *his* mind; the disturbance in the radio was coming from the massive flow of electrical current pouring into an engine starter.

A visitor from another squadron broke the silence. "No way! That transmission's tearing itself apart. That oil's getting hot for a reason, and the cooler can't keep up with it. The utility hot light comes on at about 220 degrees C, practically when it's on fire. You can't just let it sit on deck and hope it gets better. You've gotta do something to fix it, do a penalty run, change the oil or something."

The chief spoke sharply, "I don't need your inputs now, lieutenant. It's not your call." The chief felt he knew these pilots and their idiosyncracies, how they might misjudge an old shaky gauge into showing pressure fluctuations that weren't really there. The Maintenance Officer told the pilots to come home, and started rounding up a crew to go get the passengers that would be left behind. It was the most eventful Friday afternoon anyone had seen at that sleepy base in a long time.

The ex-QAO wandered out of Maintenance Control, stopping to talk to some former shipmates who worked in a shop with a window facing the mountainside where the helo would soon appear. He was relieved as the aircraft pulled into view. He had overstayed his welcome, but had been powerless to leave until he'd seen the aircraft make its approach.

"Thank God," he said as the aircraft made it back to base.

I've seen several one-time flights recently, and too many were precariously close to becoming mishaps, though all ended quietly. Sometimes I wonder who's calling the shots. I can't imagine that a CO would permit a two-hour overwater flight if he'd been told that his bird had been sucking down engine oil like an old Pinto. Someone made that decision, and they got away with it scot-free. The one-time flight made it back from the mountain, too, but they were lucky—they had done something far too risky to justify. Someday, somebody's not going to get away with it. A gearbox will seize or a carbon seal in a leaky engine will fail. Then someone will have a hard landing on an unprepared surface or will have to ditch. Someone will probably die. Can you imagine what a mishap board would say?

I did see a one-time flight that was a good example of the "proper" use of the capability. A conscientious mech had found a loose helm joint on an engine mount, and there weren't any spares to be found on the ship. The MIMs said to replace the mount bearing, but there wasn't any more specific guidance as to whether or not the aircraft was up. The part had obviously been loose for some time, but was still securely attached and functional. The three other mounts were in good shape and supported the engine without mechanical complaint. After a flurry of communications, the CO permitted an uneventful return to base.

What makes an aircraft safe for flight? Even the 4790.2E makes no specific reference to one time flights; they are neither authorized nor prohibited. A one-time flight can be a great asset, a silver bullet that extracts a squadron from appalling inconvenience. Misused, a one-time flight can turn a routine maintenance problem into the ghastly nightmare of twisted, burning metal with stiff, leaden, body bags and anguished, grieving families screaming, "Why?" Would you lie to them, or would you try to explain that you thought it was safe enough to fly home without fixing the problem? If you think about it, you'll see that there are usually better alternatives than a risky one-time flight. ◄

Lt. Churbuck flies with HSL-46's Det 3. He is a former H-3 utility pilot.

There is no such animal as a convenience flight; an aircraft is either up or it isn't. If it isn't, the one-time flight invites disaster, even though it's supposed to make things easier for the squadron.

Most people who make the decision to go with a one-time flight mean well, but make decisions based on past experience and accepted risk factors. In aviation, we work on the accepted risk factor every day, and that's with everything working properly. Add material problems to accepted risk and you get a mishap. If a mishap had occurred with this crew, the cause would have been aircrew error (they accepted the aircraft), maintenance error (they didn't follow proper procedures), and supervisory error (the CO let it happen).

Before you authorize a one-time flight, consider your options and risks. If the flight isn't worth a life, fix the bird on site (camping out in the great outdoors), then fly it.—Cdr. R. Hilfer, H-60 analyst, Naval Safety Center.

Single Engine... No Sweat?

By LCdr. F.M. Benkert

As the aircraft handling officer on an LHA, I watched in amazement as a CH-46E landed single-engine. It was daytime and the weather was nice, so why should anyone worry? As a matter of fact, not only did the pilot not declare an emergency, but he also refused a call from the Air Boss to do so. I asked some other pilots on the ship if this was normal. They replied something to the effect that single-engine in the CH-46E was "no sweat" with the power available from the Dash-16 engines. I thought that they all should have been tested for drugs.

Of the last 22 Class A helicopter mishaps, 10 have involved a single-engine failure. This number includes the one mishap when the engine failure caused an aircraft fire. After heroic efforts, the crew could only sit and watch their aircraft burn to the ground. The nine other mishaps were caused by pilot error or engine failure while outside the single-engine envelope.

Pilot error—we love that phrase. When a pilot misdiagnoses an engine failure and shuts down the good engine, is he the cause? How about those mishaps in which the engine fails, the pilot diagnoses the correct engine and then proceeds to screw it up? Then there is the famous compound emergency in which the engine failure precipitated failures that by themselves would not result in the mishap. The pilot is unaware that these failures, combined with his actions, have now caused another problem. Are we really talking about pilot error or lack of training?

I think all helo pilots recognize that they are flying outside the single-engine envelope during most takeoffs and landings especially during shipboard operations. And yes, most pilots compute the single-engine flying speed as they load up with cargo and passengers. However, it might be revealing to develop a chart for each mission as to the time spent "outside the envelope." When not within the single-engine envelope, you are dramatically increasing the chances of a Class A. How often are you there when you really don't have to be?

PH3 Daniel Fort

The failure of one engine in a dual-engine aircraft is a major emergency. Don't blow it off; use NATOPS. ◄

LCdr. Benkert is an H-46 pilot. He was a mishap investigator with the Naval Safety Center and is currently assigned to TACRON 22.

In keeping with safety practices of not assigning blame, the Navy is moving away from using the term "pilot error" as a causal factor in mishap investigations. We want to know all involved factors to make the appropriate corrective actions. Thus, causal factors are identified as aircrew, supervisory, maintenance, facilities personnel and material.—Ed.

Angel in the Storm

By Lt. Edward Miller

"Minimum time on deck," our HAC called over radio No.1 as we recovered in Venom 505 (an SH-60B) on board USS *Caron* (DD 970) on a dark and breezy night. "Let's top it off. Wet crewman get suited up. Rig for rescue. Let's hustle!" Our crew prepped for what could be our first Desert Storm rescue.

Somewhere in the cold dark waters of the Central Arabian Gulf, an F/A-18 Hornet (callsign "Active Boy") was down, its pilot's condition unknown. The search was on."Break it down. Deck, we're ready to lift," commanded the pilot. Moments later Venom 505 was cutting through the dark moonless night en route to datum. Anticipation was high, we were trained and ready. Radio No.2, tuned to the distress frequency, was jumping with activity as the on-scene commander, an E-2 Hawkeye, circled overhead vectoring his helicopter assets (a Royal Navy Lynx, a Seahawk and a Sea King) to designated search sectors. This was the only game in town and everyone wanted to play. We were no exception.

As we arrived on station and checked in with the OSC, the flash of anti-collision lights at distant 2 o'clock and 5 o'clock positions eased fears about avoiding midairs, giving a warm and fuzzy feeling to the flight crew. Now was not the time to blast into the search area with a John Wayne go-get-'em-at-all-cost attitude. There was still one unlocated asset and no one wanted a surprise midnight rendezvous.

"Sir, I'm painting four air contacts all within 10 miles," our aircrewman said. "Looks like everyone wants a piece of the action."

"Roger that," the HAC replied, "Let's play the rail and stay out of trouble. There's no need jumping into that briar patch unless we're needed." Everyone agreed. It's difficult sitting on the sidelines watching your teammates play a championship game, but it's better than losing the game because there are too many players on the field.

Bob Lawson

"Navy 410, turn left 270," the E-2 called. "Survivor is off your nose. Do you have him in sight?"

"Negative," the HAC said.

"Navy 410," the Hummer called the Sea King, "turn left 270. Do you have him in sight?"

Once again, the H-3 commander responded, "Negative, sir."

The repeated position calls alerted us in Venom 505 to concentrate our attention to the west. Then our crew chief called, "Sir, I have a flare at our 9 o'clock." As we rolled out on a heading of 270, the distinct glow of a rescue flare burned through the green hue of the copilot's (hand-held) night vision goggles.

"Sir, this is Venom 505. I have the survivor in sight," the pilot called the OSC. "Inbound for pickup."

The hover light illuminated on the automatic flight control system panel as we positioned oursevles 50 yards from the survivor in his raft.

"Are the pots zeroed?" asked the pilot. "I'm having problems holding the hover." Troubleshooting revealed a malfunctioning AFCS subsystem. We would have to make the rescue under manual control. Gusty winds with no horizon compounded the situation. Hovering 60 feet above the survivor, the aircraft's intense rotor downwash cloaked the descending wet crewman. Time stood still as maneuver instructions filled the ICS.

"I've lost him...left five," conned the senior crewman. "Continue left two...got him. Good position."

Seconds seemed like minutes and minutes like hours when the crewman called, "Sir, survivor and crewman hooked up, ready to hoist."

"Roger, bring them up."

"Ready for forward flight," called the HAC as we transitioned to forward flight. "How's our boy?"

"Sir, he's shivering like a leaf and has a cut over his right eyebrow, but he's sporting the largest smile I've ever seen."

A successful mission, especially one that involves saving someone's life, gives a heart-warming feeling. As quoted in the SH-60B NATOPS manual, "The success and safety of all missions depend on flight crew coordination and crew proficiency." Without these two ingredients this mission could very well have resulted in disaster. It's essential that each crewmember knows his assigned duties and competently uses NATOPS procedures. Approach each task with aggressive skepticism. Know the facts and flex with changing developments. Ask questions; confusion is a dirty word. ◄

Lt. Miller flies with HSL-48.

PH2 Tommy Trefts

Huey Versus the Volcano

By Lt. Kent Lidke

Helicopters don't normally land on 13,000-foot active volcanoes, but VXE-6 has never been mistaken for normal. Flying logistic support for the U.S. Antarctic Program, the squadron's UH-1N Huey crews often see Mt. Erebus as a destination on the flight schedule. Scientists spend time on Erebus and VXE-6 helos provide taxi service.

Some of our pilots dislike going to Erebus. It involves wearing oxygen masks, which don't fit well with the helo helmets and can freeze up with condensation in the cold weather. Power margin is always a problem, and to reduce gross weight, we always fly Erebus hops with a low fuel load. I kind of like it. It's incredibly beautiful, and the tight mission planning is a challenge.

My copilot and I were both at that "just qualified as HAC" stage when your confidence knows no bounds, but those conservative habits ingrained by the training command are still constantly sounding alarms. We went through the standard NATOPS brief and the polar brief with the crew chief, paying particular attention to fuel planning and power. We spent extra time briefing whiteout procedures.

On the previous deployment, one of our helos entered self-induced IFR on Erebus when the rotor wash kicked up a lot of snow during the transition to land. As the pilot pulled collective to accelerate out of it, one engine hit topping limits, and Nr started to droop. After one bounce and a 360-degree rotation, the aircraft came to rest upright, with broken skids but no major damage.

We launched from McMurdo Station with a 1,000 pounds of fuel, 1,000 psi of oxygen, one New Zealand and two American scientists. Our first mission was to take the two Americans to the lower hut, sort of a canvas quonset hut about 12,500 feet MSL. Passing 8,000 feet, we put on our O_2 masks.

It was as clear a day as I'd ever seen. The plume from the volcano was thicker than usual, rising straight up. That was good news, since high winds and orographic turbulence were common problems.

We did a power pull, and had 100 percent torque available, with one engine at about 99 percent Ng. We proceeded with the HOGE check, which required slightly less power than expected.

We set up for a low pass for zone ID and smoke drop. Yup, same hut, same place. As we turned left to begin the approach, I heard my copilot and my crew chief call, "We're contrailing." Sure enough, a long, straight cloud now blocked our approach route. "Well, maybe if we try from another angle we can get a better shot," I said. "Besides, the wind should blow it out." Alas, no wind. No better angle either.

At the end of the second pass, the whole shoulder of the mountain was covered in cloud. We were burning fuel and oxygen, so we opted for plan B.

Our second mission was to drop off the New Zealander at the Fang Glacier camp about 1,000 feet lower to pack up some gear for retro on a later trip. We circled down toward the site, and reviewed the checklists again. The glacier is narrow enough to restrict approach routes to slightly upslope or slightly downslope.

Another low pass to check the winds and look for blowing snow. The light wind was down the glacier, so we selected the upslope approach. We saw no sign of blowing snow on our low pass. Everything was looking good as we came on down. The crew chief called, "Light, blowing snow," as we began to decel through translational lift.

"The wind'll keep it off us," I thought. It's only light blowing snow. Is it catching up with us?" I asked, stabilizing in a 10-foot, 15-knot fast taxi. "Up to the doors," came the reply.

"Okay," I said, "slowing down. Waveoff heading 250." We had briefed to declare waveoff heading if there was any chance of whiteout. I started to slow down.

Three things happened at once. The world vanished, replaced by a bright white wall, my copilot helpfully yelled, "Waveoff!", and the crew chief said "Sir, we need to come up, or we're going to hit the ground."

I stabilized, went to the gauges, and felt the right skid heel hit the ground. I realized that "puckered" is not just a figure of speech and started to yank on the collective. Something in the back of my mind said "Don't!", even while the front was screaming, "Pull!"

I checked power and stopped pulling at 95 percent, and doublechecked heading at 250. We popped out within five seconds—five long seconds.

We tried again, using a high hover to blow off the snow, but it was billowing up at us even at 50 feet. We decided that one IFR, high-altitude touch-and-go was enough for one day, and headed back to McMurdo, out of gas, oxygen and ideas.

As we debriefed, we couldn't find one specific thing that put us in the box. A lower, slower pass might have shown us the blowing snow. Maybe we stuck with it a few seconds longer than we should have. Though we couldn't figure out exactly how we got in, it was crystal clear what got us out: the brief.

Our extensive brief on whiteout procedures gave us an immediate course of action without having to figure it out while flying. In the goo, bumping against a 13,000-foot volcano is a bad time to learn new tricks. ◄

Lt. Lidke flies with VXE-6.

The Crew Chief Didn't Listen...

By Maj. R.C Ferrara, USMC

What started out as a well-briefed and well-planned night vision goggle (NVG) flight ended in tragedy. A flight of two USMC helicopters departed Reno-Stead Airfield on an NVG instructor-under-training flight. The NAV portion of the mission went as briefed; the section CAL portion did not, because the crew chief fell out of the lead aircraft.

This crew chief had reenlisted for a lateral move from motor transport to an aviation-related field. The sergeant was dedicated, but had limited aviation experience. This crew chief's overall safety awareness was described as less than average. He had his own way of doing things in the aircraft. Within the preceding 19 months, four other crew chiefs had seen this crew chief—on eight occasions—moving about unrestrained in the cabin with the cabin door open.

> ...four other crew chiefs had seen this crew chief —on eight occasions— moving about unrestrained in the cabin with the cabin door open.

During the fatal flight, in the abeam turn on the initial approach, the crew chief unlatched his seat belt and knelt in the open, starboard cabin door, his technique for getting a better vantage point to judge altitude and obstacle clearance. The first and second approaches proceeded to the same landing spot in the LZ. The entire crew was on NVGs.

For both approaches, the crew chief acknowledged landing checks with, "All set in the back." The third and final approach for the evening proceeded to a location more favorable for the winds. This landing spot was near a fence, which should not have been a factor. The crew chief turned over responsibility for clearing calls to the qualified observer. Though the crew chief had passed responsibility to the observer, he was concerned about the fence and rocky landing area in the LZ. The crew chief knelt in the open door, leaned further out to cross check the qualified observer's obstacle clearance calls, placing his weight against the wing door. The wing door popped open, the crew chief lost his balance and fell out.

The helo was on long final, decelerating through 60 knots, with zero degree AOB, and 3-5 degrees nose-up. It was descending at 300 fpm and was at approximately 100-150 feet AGL. The wingman and his crew chief saw an object fall from the starboard cabin area of the lead aircraft. The mishap crewman fell to the ground feet first at a 45-degree angle and was killed. His gunner's belt was found neatly folded underneath several other items in his zipped helmet bag.

How could we have avoided this mishap? Four crew chiefs had previously counseled this crewmember on his violation of NATOPS procedures. However, they had not discussed the crew chief's action among themselves. Each was satisfied that this situation was an isolated incident and been resolved. No documentation of this NATOPS violation was noted. The squadron's aviation safety officer was not notified of this problem, and neither was the CO. The purpose of the hazard reporting system is to save lives and property. A local hazard reported verbally or via Anymouse within the command would have prevented this mishap.

I know it is hard to report NATOPS violations by your peers to the safety officer. In this case, it would have saved a life. ◄

Maj. Ferrara is the H-1 analyst for the Naval Safety Center.

Skydiving Into a Blender *or* Not Everyone Reads NOTAMs

By Lt. Grady Banister

It started out as a day of fun with the Special Ops Team at the Amphib Base. We got everyone qualified in fast-rope, and carried the crew around the field a couple of times on the SPIE rig. We were all satisfied with the day's activities and as the special ops guys secured, we departed the field for the hot pit at homeplate.

While we were in the hot pit, base called to ask us to pick up another mission. The scheduled aircraft had maintenance problems and we were needed to fly overwater paradrops with the same group we had just left. Base checked that NOTAMS had been put out to secure the DZ and we finished refueling.

Because of a delay caused by the civilian tower controlling the area, we arrived at the amphib base with only an hour of fuel. The jumpmaster gave a thorough brief and the jumpers were loaded. Since the drop zone was only five minutes away, we weren't too worried about fuel.

We launched with 40 minutes of fuel and had no problem contacting the approach controller for the drop zone. The plan was to kick our jumpers out at 1,500 feet after two passes over the recovery boats to check the winds. In 10 minutes we were in NOTAM-secured airspace, in radar contact and on altitude.

On the first pass, an H-53 passed directly beneath us. They motored on without a word and we continued around for a second try. The next pass was uninterrupted and we managed to drop the wind streamers. The third pass was uneventful and the jumpers were given the one-minute warning.

At last we turned on final and lowered the ramp. The winds looked good, the jumpers were standing by, the recovery boats were on station. Five, four, three, two—what's that? Directly below us and flying in the same direction was an H-2.

"Abort the jump! Abort!" I called. Hoping to save the mission, I turned left for another try. The H-2 lazily turned to match us. Now fuel was a factor. The H-2 stayed with us for two more passes while flying this "form." At that point we had to bingo. By the time we came back from a quick refueling, the recovery boats were gone and the mission was scrubbed.

I know that neither the H-53 nor the H-2 intentionally flew under my aircraft, and I know it was only coincidence that the H-2 matched my every turn in the drop pattern. They never knew we were there. I also know that a parachutist passing through an helo's rotor disk would be fatal for both the jumper and the helo. Luckily we only lost the mission.

Oh yeah, I know one other thing: those aircraft commanders did not read the NOTAMS and suffered a near-fatal loss of situational awareness. We often forget that situational awareness begins in the brief and continues on the flight. ◀

Lt. Banister flies with HC-6.

No Worries

Official Royal Navy

By LCdr. Stephen Shepherd

I was on board RFA *Argus*, a Royal Navy aviation training ship. It was my first at-sea period in more than three years. In my innocence, I assumed that the Brits operated in the same general way that the U.S. Navy did.

The lovely spring day offered absolutely perfect conditions. The sortie was a syllabus flight to qualify aircrewmen on Sea King HIFR equipment. The mission would also serve as a requal for me.

Everything went well for about the first hour with me flying and the crew doing a number of dry and wet hookups. We were located aft of spot 3 on *Argus* (port side, aft end of the flight deck). We had seven or eight people on the flight deck helping with the operation. The pilot in the left seat (the HAC) was an experienced instructor who had flown this mission many times.

We were connected to the HIFR equipment, transferring fuel to the helo, when a second Sea King returned to the ship after an ASW hop. The two pilots of the second helo were both instructors and both had a lot of experience in the fleet. They called for landing and received clearance to land on spot 2, approximately 125 feet in front of us. The ship had very little motion and the HAC and I watched as the second aircraft entered a hover in front and to the left of us, and 15 to 20 feet higher than us. We sat there, fat dumb, and happy, as the second helo started to move right to land in front of us.

As he continued right, my HAC said to me nonchalantly, "No worries. He's OK." Within seconds, we felt the other helo's downwash. Immediately, our aircraft started toward the water, 40 feet below.

"He's blowing us out of the sky!" I yelled. The flight deck disappeared from view and I was looking at a large gray wall with a sign that said, "Beware of turning props." We were sinking fast.

Simultaneously, the HAC and I gave the collective a

hefty clean-and-jerk and stepped on our left rudder pedals to offset the increased torque. Unfortunately, the combination of both our actions overdid things. The Sea King yawed to the left swinging the tail dangerously close to the ship. Our torque meters read "130 something" (120 percent twin-engine torque limit). We stopped our descent and popped back up through the other helo's downwash. We actually shot past the flight deck, scattering HIFR equipment and the people on deck.

We got everything back under control, landed back on board and shut down. I had a bad feeling that I had just helped to trash the main gear box. Maintenance said we had only removed a few hours from the box's expected life, but had rendered the aircraft unserviceable pending a gear-box inspection.

The three other pilots and I got together with the air operations officer later in the evening to discuss the incident. It soon became clear that everyone made a number of wrong assumptions.

First, being new to the Royal Navy, I assumed that the Boss was an experienced aviator. In fact, he was an air traffic controller with very little appreciation for helicopter operations, other than the basics. Second, I assumed that the RN had developed flight envelopes for flight-deck operations that considered mixed operations such as landings with HIFRs in progress. But no such envelopes existed.

Third, my HAC thought that the distance between the two aircraft was sufficient. The crew of the other aircraft assumed the same; it wasn't.

Finally, the Boss assumed that since neither crew objected to the landing setup, it was OK to proceed.

One other factor contributed to this near miss: the weather. It was so perfect that it lulled us into – gasp! – complacency (I use the word only once). We had no worries; it was a beautiful day.

Since then, I have had the chance to work with other NATO ships, including those of the U.S. Navy. My policy is that I assume nothing. My attitude is that they know very little about my aircraft and I have to look out for number one. ◀

LCdr. Shepherd was an exchange pilot with No. 810 Naval Air Squadron, RNAS Culdrose, at the time of this incident. He is currently assigned to HS-7.

Official Royal Navy

Helos Can Land Anywhere... Can't They?

NFT Inc.

By LCdr. Steve Smith

Another beautiful day in southern California. I was anxious to get a break from my ground job, even if just for a few hours. I had just returned from deployment and was scheduled to fly a couple of area FAMs before my HAC check flight. In the brief, the aircraft commander was happy to find out that additional tasking was given to our touch-and-go-'til-you-puke flight. We were supposed to take COMDESRON from home base to the naval station approximately 120 miles north and drop him off.

"No sweat," I thought, "this will be great experience for when I'm in charge of an aircraft." After briefing the specifics and calling ahead for a charlie time, we manned up.

When we arrived on top, we noticed an aircraft shut down on the only helo pad and none of the crew in sight. We later learned that the CH-46 had engine problems. The pilots probably had gone to lunch, leaving a lone crewman to guard their flight jackets.

As the aircraft HAC and I discussed our options, we saw one of the crash crew motioning for us to land at an adjacent softball field. With plenty of room, a fire guard in place and the reassuring sight of a local fireman giving his thumbs up (for what that was worth), we set up for the field.

As we transitioned to a hover, I noticed something we hadn't planned on; what had been several families enjoying a nice afternoon barbecue was now a frantic mob of people making a mad dash to their cars because our rotorwash had turned the serene setting into a turbulent, dust and sand-filled windstorm with pieces of chicken and hot dog buns flying everywhere. As the thought of my HAC board turning into a FNAEB flashed in my brain, it quickly dawned on me that although a helicopter can land anywhere, a naval aviator can't.

In this case, although the area seemed to be a good landing site, we failed to analyze the surrounding environment. Helo pilots must remember that the aircraft's capability does not always equal the pilot's. Factors such as noise-sensitive areas, public health, wildlife preservation and foreign diplomacy should be considered as much as the usual factors of terrain, altitude waveoff capability and obstacle clearance.

Luckily, the only damage or injury from this incident was to our egos and the picnic. It could have been disastrous. ◄

LCdr. Smith flies SH-60s with HSL-45.

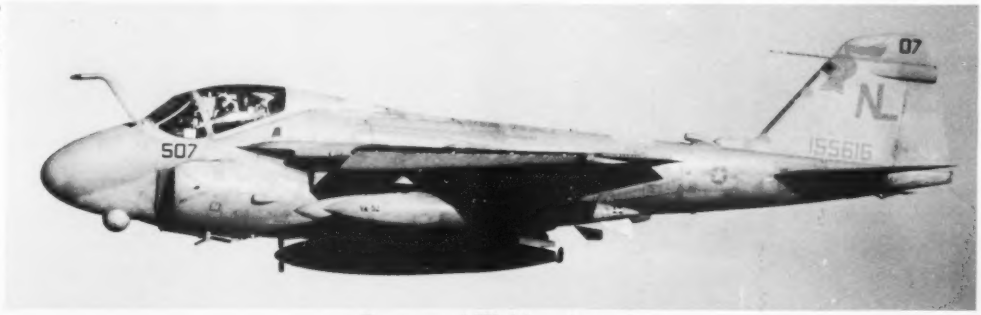
1992 approach Contributor Awards

We are pleased to announce the winners of the *Approach* Contributor Awards for 1992. Contributions over the past year have been exceptional, and choosing winners in each category was difficult. All the authors and photographers who were published contributed to the success of the magazine and to aviation safety.

Thanks to everyone who took the time to write an article or shoot a photo, and send them to us, even if we couldn't use or find a spot for them. The Naval Safety Center and *Approach* congratulate this year's winners.

Lt. Steve Halsted, Editor

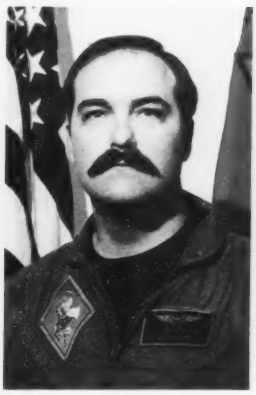
Nate Leong



Command Writing Award
VA-52

Contributor of the Year
Maj. John P. Dehart, USMCR
HMA-775

Sheldon Kelly



Article of the Year
"Topless Tomcat at 29,000 Feet" (October)
by LCdr. Joe Edwards (left) and
LCdr. Scott Grundmeier (right), VF-142

Photographer of the Year
PH1(AW) Michael D.P. Flynn
Fleet Imaging Center Atlantic

Special Contributor Award
Morgan Ian Wilbur

Mr. Wilbur has painted several fine covers since 1986, all of which have generated much favorable comment and helped to introduce those issues.

Honorable Mention
"Half an Ejection is Definitely Not Better Than No Ejection!"
by Lt. Keith Gallagher
and
"A BN in the Rumble Seat" (October)
by Lt. Mark Baden, VA-95

Honorable Mention
Capt. Rick Mullen, USMCR
HMH-769

Note: We'd like to extend special appreciation to the Green Lizards of VA-95, whose extensive, highly successful squadron writing program set the pace for the rest of the fleet for four years.

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Don't give FOD a chance!

Poster idea contributed by VA-115. Photographs by AMS1(AW) Steve Hudson and PH3 Jay Peloquin (bottom).